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Andrew A. Chien

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EXAMINER

ABRISHAMKAR, KAVEH

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/727,105	<b>Applicant(s)</b> CHIEN ET AL.	
	<b>Examiner</b> Kaveh Abrishamkar	<b>Art Unit</b> 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15, 20-23, 25-30 and 35-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 20-23, 25-30, and 35-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

1. This action is in response to the amendment filed on November 26, 2004. Claims 1-39 were originally received for consideration. Per the received amendment, claims 1-4, 5, 7, 11, 15, 20, 22, 23, 25, and 35 are amended, and claims 16-19, 24, and 31-34 are cancelled. Claims 1-15, 20-23, 25-30, and 35-39 are currently being considered.

### *Response to Arguments*

2. Applicant's arguments, filed on November 26, 2004, have been fully considered but they are not persuasive because of the following reasons:

Regarding independent claim 1, the applicant argues that the CPA, Hollander et al. (U.S. Patent No. 6,412,071), does not teach, "modifying application binary prior to execution of the application binary." This argument is not found persuasive. The CPA teaches a means to intercept calls, and injecting an API interception module into a process address space (column 5 lines 40-46). Furthermore, the CPA discloses a method of double patching which is used to handle intercepted API functions, which are used to "enable the execution of a user-developed routine (modified application binary) **before the execution** of the API function" (column 5 lines 45-62). Therefore, the Examiner respectfully asserts that the CPA does teach, "modifying the application binary prior to execution of the application binary." Furthermore, the Applicant argues that the CPA does not teach intercepting at least one call that is made by an application

such that a "graphical user interface that is displayed by the application is modified", "requests for machine or user-specific information are virtualized", and "the contents of at least one file that is used by the application is encrypted transparently to the application." This argument is not found persuasive. The CPA discloses intercepting calls (column 7 lines 49-53), and states that any calls that include exported functions can be intercepted and modified (column 6 lines 35-48). These intercepted calls can include graphical user interface, virtualized user information, and encrypted files. Therefore, the Examiner asserts that the CPA does teach the above limitations. Therefore, the rejection for the pending claims 1-15, 20-23, 25-30, and 35-39 is maintained, and previous rejections and new rejections are given below.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2, as amended, recites the limitation "the application program" in all of the limitations. There is no mention of the "application program," just an "application." The terms seem to be used interchangeably which causes the claim to become indefinite as to the function of the application program and the application. There is also insufficient antecedent basis for this limitation in the claim.
4. Claim 20, as amended, recites the limitation "the application program" in all of the limitations. There is no mention of the "application program," just an "application." The terms seem to be used interchangeably which causes the claim to become indefinite as

to the function of the application program and the application. There is also insufficient antecedent basis for this limitation in the claim.

5. Claim 22, as amended, recites the limitation "the application program" in all of the limitations. There is no mention of the "application program," just an "application." The terms seem to be used interchangeably which causes the claim to become indefinite as to the function of the application program and the application. There is also insufficient antecedent basis for this limitation in the claim.

6. Claim 2, as amended, is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim, and particularly the limitation stating "prior to the execution of the application program, identifying at least one call that are made by the application to an external routine," is indefinite in that it is unclear how the step of identifying the at least one call to an external routine is made prior to the execution of the application program.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 4, 6-19, 25-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Hollander et al. (U.S. Patent 6,412,071).

Regarding claim 4, Hollander discloses:

A method of securing an application for execution on a computer, the method comprising:

identifying calls that are made by the application to an external routine, wherein the application includes at least one binary (Figure 4 step 160, column 7 line 49 – column 8 line 10);

prior to the execution of the application, modifying the binary to invoke an interception module (Figure 4 step 168, column 5 lines 40 – 46, column 7 lines 45-50);  
and

storing the modified binary (column 5 lines 45-61).

Regarding claim 6, Hollander discloses:

A method of securing an application, the method comprising:

identifying calls that cause a detrimental effect to the computer or another application (Figure 4 step 160, column 7 line 49 – column 8 line 10);

prior to execution of the calls, modifying a binary of the application to invoke an interception module with respect to the identified calls (Figure 4 step 168, column 5 lines 40 – 46, column 7 lines 45-50); and  
storing the modified binary (column 5 lines 45-61).

Regarding claim 7, Hollander discloses:

A method of securing an application, the method comprising:

intercepting at least one call that is made by the application such that a graphical user interface that is displayed by the application is modified (Figure 4 step 160, column 7 lines 49 – 53);

intercepting at least one call that is made by the application program such that requests for machine or user specific information are virtualized (Figure 4 step 160, column 7 lines 49 – 53); and

intercepting at least one call that is made by the application such that the contents of at least one file that is used by the application is encrypted transparently to the application (Figure 4 step 160, column 7 lines 49 – 53).

Regarding claim 11, Hollander discloses:

The method of securing an application, the method comprising:

intercepting at least one call that is made by the application such that a graphical user interface that is displayed by the application is modified (Figure 4 step 160, column 7 lines 49 – 53); and

intercepting at least one call that is made by the application such that the contents of at least one file that is used by the application is encrypted transparently to the application (Figure 4 step 160, column 7 lines 49 – 53).

Regarding claim 14, Hollander discloses:

A program storage device storing instructions that when executed perform the steps comprising:

intercepting at least one call that is made by the application such that a graphical user interface that is displayed by the application is modified (Figure 4 step 160, column 7 lines 49 – 53); and

intercepting at least one call that is made by the application such that the contents of at least one file that is used by the application is encrypted transparently to the application (Figure 4 step 160, column 7 lines 49 – 53).

Regarding claim 15, Hollander discloses:

A method for allowing application programs to execute in non-native environments, the method comprising:

identifying a service that is not provided by a selected operating system (Figure 4 step 160, column 7 line 49 – column 8 line 10); and

prior to execution of an application program, modifying a binary of the application program to invoke an interception service instead of requesting the service from the



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selected operating system (Figure 4 step 168, column 5 lines 40 – 46, column 7 lines 45 – 48).

Regarding claim 25, Hollander discloses:

A system for securing an application, the system comprising:

means for intercepting at least one call that is made by the application such that a graphical user interface that is displayed by the application is modified;

means for intercepting at least one call that is made by the application program such that requests for machine or user information are virtualized (Figure 4 step 160, column 7 lines 49 – 53); and

means for intercepting at least one call that is made by the application such that the contents of at least one file that is used by the application is encrypted transparently to the application (Figure 4 step 160, column 7 lines 49 – 53).

Regarding claim 28, Hollander discloses:

A system for securing an application for execution on a computer, the system comprising:

means for intercepting at least one call that is made by the application such that a graphical user interface that is displayed by the application is modified (Figure 4 step 160, column 7 lines 49 – 53); and

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means for intercepting at least one call that is made by the application such that the contents of at least one file that is used by the application is encrypted transparently to the application (Figure 4 step 160, column 7 lines 49 – 53).

Regarding claim 35, Hollander discloses:

A system for securing an application, the system comprising:

a preprocessor module for, prior to execution of the application, identifying calls that are made by the application to at least one external routine, the preprocessor module modifying the application to invoke an interception module in response to the application invoking the external routine, the preprocessor module configured to store the modified application (Figure 4 step 160, step 168, column 5 lines 40 – 46, column 7 line 45 – column 8 line 10).

Regarding claim 38, Hollander discloses:

A method of securing an application for execution on a computer, the method comprising:

rewriting the binary of an application thereby preventing the application from:

accessing a predefined set of data (Figure 4 step 160, column 7 line 49 – column 8 line 10);

invoking a predefined set of instructions (Figure 4 step 168, column 5 lines 40 – 46, column 7 lines 45 – 48); and

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accessing one or more files that are in one or more predefined directories Figure 4 step 168, column 5 lines 40 – 46, column 7 lines 45 – 48).

Claim 8 is rejected as applied above in rejecting claim 7. Furthermore, Hollander discloses:

The method of claim 7, wherein the machine information includes operating system information (column 7 lines 49 – 63).

Claim 9 is rejected as applied above in rejecting claim 7. Furthermore, Hollander discloses:

The method of claim 7, additionally comprising intercepting at least one call that is made by the application such that the filename of at least one file that is used by the application is encrypted transparently to the application (column 7 lines 49 – 63).

Claim 10 is rejected as applied above in rejecting claim 7. Furthermore, Hollander discloses:

The method of claim 7, additionally comprising modifying a directory structure of a set of files (column 7 lines 49 – 63).

Claim 12 is rejected as applied above in rejecting claim 11. Furthermore, Hollander discloses:

The method of claim 11, additionally comprising intercepting at least one call that is made by the application such that the filename of at least one file that is used by the application is encrypted transparently to the application (column 7 lines 49 – 63).

Claim 13 is rejected as applied above in rejecting claim 11. Furthermore, Hollander discloses:

The method of claim 11, additionally comprising modifying a directory structure of a set of files (column 7 lines 49 – 63).

Claim 26 is rejected as applied above in rejecting claim 25. Furthermore, Hollander discloses:

The system of claim 25, additionally comprising means for intercepting at least one call that is made by the application such that the filename of at least one file that is used by the application is encrypted transparently to the application (column 7 lines 49 – 63).

Claim 27 is rejected as applied above in rejecting claim 25. Furthermore, Hollander discloses:

The system of claim 25, additionally comprising means for modifying a directory structure of a set of files (column 7 lines 49 – 63).

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Claim 29 is rejected as applied above in rejecting claim 28. Furthermore, Hollander discloses:

The system of claim 28, additionally comprising intercepting at least one call that is made by the application such that the filename of at least one file that is used by the application is encrypted transparently to the application (column 7 lines 49 – 63).

Claim 30 is rejected as applied above in rejecting claim 28. Furthermore, Hollander discloses:

The system of claim 28, additionally comprising means for modifying a directory structure of a set of files (column 7 lines 49 – 63).

Claim 36 is rejected as applied above in rejecting claim 35. Furthermore, Hollander discloses:

The system of claim 35, wherein the preprocessor module encrypts at least a portion of a filename that is associated with the application (column 7 lines 49 – 63).

Claim 37 is rejected as applied above in rejecting claim 35. Furthermore, Hollander discloses:

The system of claim 35, wherein the preprocessor module encrypts the contents of at least a portion of the application (column 7 lines 49 – 63).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 5, 20-24 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hollander et al. (U.S. Patent 6,412,071) in view of Frese, II et al. (U.S. Patent 5,909,545).

Regarding claim 1, Hollander discloses:

A system for securing an application for execution on a computer, the system comprising:

a preprocessor module for identifying calls that are made by an application binary to at least one routine that is provided by an operating system, the preprocessor module, prior to execution of the application binary, modifying the application binary such that an interception module is invoked in response to the application binary invoking the identified calls (Figure 4 step 160, column 7 line 49 – column 8 line 10).

Hollander does not explicitly describe a server in communication with a client via a network so that the client can receive the modified application from the server before executing the application. Frese discusses a system which includes an application interception module which is transported over a network (Abstract, column 2 lines 1 – 47). The transport of software applications over a network between two computers is

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well-known in the art and provides the benefit of being able to distribute the security application to a group of computers that have an Internet connection to a server which stores the specific module. Frese address the benefits of reducing the time needed to attain the software (column 2 lines 4 – 6), and the ease of which any computer with an Internet connection can retrieve the application (column 2 lines 13 – 47). Therefore it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to use the method of transporting an application module of Frese in conjunction with the module of Hollander to facilitate and expedite the process of loading the application on multiple computers.

Regarding claim 2, Hollander discloses:

A method of securing an application for execution on a computer, the method comprising:

prior to execution of the application program, scanning the application program for code sequences that cause the computer to trap the operating system (column 5 lines 22 – 46);

prior to execution of the application program, modifying the code sequences such that the computer does not trap to the operating system (column 5 lines 46 – 62);

prior to execution of the application program, identifying at least one call that are made by the application to an external routine (Figure 4 step 160, column 7 line 49 – column 8 line 10); and

prior to execution of the application program, providing at least one interception module for the identified calls (Figure 4 step 168, column 5 lines 40 – 46); and

prior to execution of the application program, storing the modified application program (column 5 lines 40-61).

Regarding claim 3, Hollander discloses:

A method of securing an application, the method comprising:

scanning the application program for code sequences that cause the computer to trap to the operating system (column 5 lines 22 – 46);

modifying the code sequences such that the computer does not trap to the operating system (column 5 lines 46 – 62);

identifying at least one call that is made by the application to an external routine (Figure 4 step 160, column 7 line 49 – column 8 line 10);

providing at least one interception module for the identified calls (Figure 4 step 168, column 5 lines 40 – 46);

storing the modified application program and the interception module (column 5 lines 40-61).

Regarding claim 20, Hollander discloses:

A system for securing an application, the system comprising:

means for scanning the application program for code sequences that cause the computer to trap to the operating system (column 5 lines 22 – 46);



means for, prior to execution of the application program, modifying the code sequences such that the computer does not trap to the operating system (column 5 lines 46 – 62);

means for identifying calls that are made by the application to an external routine (Figure 4 step 160, column 7 line 49 – column 8 line 10);

means for providing at least one interception module for the identified calls (Figure 4 step 168, column 5 line 40 – 46);

means for storing the modified code sequences (Figure 4 step 160, column 7 lines 49 – 63).

Hollander does not explicitly describe a server in communication with a client via a network so that the client can receive the modified application from the server before executing the application. Frese discusses a system which includes an application interception module which is transported over a network (Abstract, column 2 lines 1 – 47). The transport of software applications over a network between two computers is well-known in the art and provides the benefit of being able to distribute the security application to a group of computers that have an Internet connection to a server which stores the specific module. Frese address the benefits of reducing the time needed to attain the software (column 2 lines 4 – 6), and the ease of which any computer with an Internet connection can retrieve the application (column 2 lines 13 – 47). Therefore it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to use the method of transporting an application module of Frese in

conjunction with the module of Hollander to facilitate and expedite the process of loading the application on multiple computers.

Regarding claim 22, Hollander discloses:

A system for securing an application, the system comprising:  
means for scanning the application program for code sequences that cause the computer to trap to the operating system (column 5 lines 22 – 46);  
means for, prior to execution of the application program, modifying the code sequences such that the computer does not trap to the operating system (column 5 lines 46 – 62);  
means for identifying calls that are made by the application to an external routine (Figure 4 step 160, column 7 line 49 – column 8 line 10);  
means for providing at least one interception module for the identified calls (Figure 4 step 168, column 5 lines 40 – 46, column 7 lines 45 – 49);  
means for storing the modified code sequences (column 5 lines 40-61).

Claim 5 is rejected as applied above in rejecting claim 4. Hollander does not explicitly describe a server in communication with a client via a network so that the client can receive the modified application from the server before executing the application. Frese discusses a system which includes an application interception module which is transported over a network (Abstract, column 2 lines 1 – 47). The transport of software applications over a network between two computers is well-known in the art and

provides the benefit of being able to distribute the security application to a group of computers that have an Internet connection to a server which stores the specific module. Frese address the benefits of reducing the time needed to attain the software (column 2 lines 4 – 6), and the ease of which any computer with an Internet connection can retrieve the application (column 2 lines 13 – 47). Therefore it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to use the method of transporting an application module of Frese in conjunction with the module of Hollander to facilitate and expedite the process of loading the application on multiple computers.

Claim 21 is rejected as applied above in rejecting claim 20. Furthermore, Hollander discloses:

The system of claim 20, wherein the threshold is determined in real time by monitoring the system state (column 3 lines 62 – 67).

Claim 23 is rejected as applied above in rejecting claim 22. Furthermore, Hollander discloses:

The system of claim 22, additionally comprising means for intercepting at least one of the identified calls and wherein the means for intercepting prevents the application from communicating with network devices that are not listed in a pre-approved list of network connections (column 7 lines 49 – 63).

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Claim 39 is rejected as applied above in rejecting claim 38. Furthermore, Hollander discloses:

The method of claim 38, additionally comprising rewriting the binary of the application thereby preventing the application from modifying an output device of the computer (Figure 4 step 168, column 5 lines 40 – 46, column 7 lines 45 – 49).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Abrishamkar whose telephone number is 571-272-3786. The examiner can normally be reached on Monday thru Friday 8-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KA  
04/11/05

  
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